What is claimed is:

1. A method of performing spectral analysis in a pharmaceutical dissolution process, the method comprising:

inserting a fiber optic probe of a spectral analyzer into a dissolution vessel, the dissolution vessel containing a dissolution medium, the probe

5   having a launch cable, a return cable, a launch lens portion, a return lens portion and a reflector, the reflector being spaced from both the lens portions, the cables, lens portions and reflector being arranged and adapted to form a light pathway whereby light transmitted through the launch cable passes through the launch lens portion, through a volume of the dissolution media in

10   the spacing between the launch lens portions and the reflector, through the return lens portion, and then through the return cable, the spacing between the reflector and the lens portions comprising a sample region, the fiber optic probe being sized and adapted to prevent bubbles in the dissolution media from being trapped in the sample region;

15   transmitting light along the optic pathway;

analyzing the transmitted light for determining certain optical properties of the dissolution media in the sample region.

2. A method as set forth in claim 1 wherein the probe further comprises a sheath portion, the sheath portion containing the lens portions and reflector, the sheath portion having a diameter equal to or less than approximately 5 mm.

3. A method as set forth in claim 2 wherein the sheath portion has a diameter equal to or less than approximately 4 mm.

4. A method as set forth in claim 1 wherein the launch lens portion and the return lens portion are portions of a single monolithic lens.

5. A method as set forth in claim 1 wherein the launch and return cables extend generally along a probe axis, each cross-sectional dimension of the probe lying in a plane perpendicular to the probe axis and between the reflector and the lens portions is equal to or less than approximately 5 mm.

6. A method as set forth in claim 1 wherein the launch and return cables extend generally along a probe axis, each cross-sectional dimension of the probe lying in a plane perpendicular to the probe axis and between the reflector and the lens portions is equal to or less than approximately 4 mm.

7. A method as set forth in claim 1 wherein the reflector is a mirror.

8. A method as set forth in claim 1 wherein the launch lens portion is generally aligned with an end of the launch cable, and wherein the return lens portion is generally aligned with an end of the return cable.

9. A method of performing spectral analysis in a pharmaceutical dissolution process, the method comprising:

inserting a fiber optic probe of a spectral analyzer into a dissolution vessel, the dissolution vessel containing a dissolution medium, the probe
5   having a launch cable, a return cable, a launch lens portion, a return lens portion and a reflector, the launch and return cables extending generally along a probe axis, the reflector being spaced from both the launch lens portion and the return lens, the cables, lens portions and reflector being arranged and adapted to form a light pathway whereby light transmitted through the launch
10 cable passes through the launch lens, through a volume of the dissolution medium in the spacing between the lens portions and the reflector, through the return lens, and then through the return cable, the spacing between the reflector and the lens portions comprising a sample region, each cross-sectional dimension of the probe lying in a plane perpendicular to the probe
15 axis and between the reflector and the lens portions being equal to or less than approximately 5 mm;

transmitting light along the optic pathway;

analyzing the transmitted light for determining certain optical properties of the dissolution media in the sample region.

10. A method as set forth in claim 9 wherein the launch lens portion is generally aligned with a forward end of the launch cable, and wherein the return lens portion is generally aligned with a forward end of the return cable.

11. A method as set forth in claim 10 wherein each cross-sectional dimension of the probe lying in a plane perpendicular to the probe axis and between the reflector and the lens portions is equal to or less than approximately 4 mm.

12. A method as set forth in claim 10 wherein the probe further comprises a sheath portion, the sheath portion containing the lens portions and reflector, the sheath portion having a diameter equal to or less than approximately 5 mm.

13. A method as set forth in claim 12 wherein the sheath portion has a diameter equal to or less than approximately 4 mm.

14. A method of making a fiber optic probe comprising:

placing into a sheath a launch cable, a return cable, a launch lens portion, a return lens portion, and a reflector, the launch lens portion being forward of and aligned with the launch cable, the return lens portion being

5   forward of and aligned with the return cable, the launch lens portion having a focal length substantially equal to the focal length of the return lens portion, the sheath having an end margin extending forward from the lens portions and terminating in a sheath end, the end margin of the sheath having at least one slot therein;

10   positioning a reflector element adjacent the sheath end;

placing the return cable into optical communication with an optical detector;

transmitting light along the launch cable through the launch lens portion and to the reflector element;

15   adjusting the position of the reflector element relative to the sheath to substantially maximize detection by the detector of the transmitted light reflected from the reflector through the return lens portion and through the return cable and to the detector;

securing the reflector element to the sheath to maintain the reflector

20   element in its adjusted position.

15. A method as set forth in claim 14 wherein the slot extends forward to the reflector element.

16. A method as set forth in claim 14 wherein the sheath has a diameter equal to or less than approximately 5 mm.

17. A method as set forth in claim 14 wherein the sheath has a diameter equal to or less than approximately 4 mm.

18. A method as set forth in claim 14 wherein the launch lens portion and the return lens portion are portions of a single monolithic lens.